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## INDUSTRIAL INFLUENCE OF LEAD IN MISSOURI

In a paper referring to the mineral wealth of Wisconsin Dr. O. G. Libby has shown that the lead and shot trade together attracted capital to that state, helped to fill its southern counties with population, and gave an impulse to industrial life which has never since been lost.<sup>1</sup> It might be observed in this connection that the lead resources of southern Missouri have produced here similar results, and, in the second place, that up to 1852 or 1853, when the building of railways caused a diversion eastward of a large part of the traffic, St. Louis received the principal commercial benefits of the lead business of the upper Mississippi region including southern Wisconsin and northwestern Illinois.

The quest for furs was not the pioneer industry in Missouri as it was in other parts of the interior. The priority belongs to lead.<sup>2</sup> This was due in part to the mineral wealth of the territory, and in part to the enterprise of John Law, and to the requirements of the Company of the West which made the search for precious metals a matter of great importance. Thus the beginning of mining in Missouri antedated the founding of the first trading post by about forty years. While the site of St. Louis, settled in 1764, was chosen with reference to the needs of the fur trade, a number of factors combined to make this city one of the leading lead markets of the country. The concentration here of a large part of the western Indian trade was in itself one of the elements in the situation, for the trappers, who brought hither their furs, bought supplies, one of the most important of which was shot. While the bulk of the product of the upper Mississippi mines, for a number of years, had no other outlet than down river, it did not follow from this circumstance that this traffic would seek St. Louis rather than other places, such as Alton, Ill., which at one time made a vigorous effort to get it, or Ste. Genevieve, Mo., which was already a place of

<sup>1</sup> *Wisconsin Historical Collection*, XIII, 334.

<sup>2</sup> *Western Journal and Civilian*, III, 18; J. T. Scharf, *History of St. Louis City and County*, I, 308; II, 1249.

deposit before St. Louis became of any commercial importance. The determining factors were that the town which secured the lead business should be able to furnish not only provisions, and a variety of merchandise, but a considerable amount of capital. The last-named condition was especially necessary, because the miners and manufacturers were, as a rule, persons of small means and were, therefore, compelled to realize on their product as soon as possible to keep their works in operation. At the time the northern lead trade began to grow, no place on the river was so well able to satisfy the above conditions as St. Louis.

In view of the early relative importance of this business, one writer has asserted that St. Louis almost owed its existence to lead.<sup>1</sup> Indeed, between the years 1790 and 1835, this element and furs generally constituted the principal exports, and up to about 1850 the traffic in lead, taking into account receipts of metal and shipment of merchandise or money in payment for the same, formed a considerable part of the total value of the commerce of the city.<sup>2</sup> While in later years the lead trade declined in relative importance, the imports were valued often at several millions of dollars annually. The amount in 1910 was \$9,165,000.<sup>3</sup> This brief outline serves to convey some idea of the rôle which lead has played in the prosperity of the region. In this paper an answer is sought to the question: "What has been the contribution of this element as a resource and as an article of trade to the development of Missouri in population, trade, and manufacture?"

The inauguration of lead mining and smelting in Missouri, shortly after 1720, was a by-product of the quest for precious metals, and had its immediate origin in the activity of John Law and the organization of the Company of the West. Law saw a magnificent opportunity for speculation in the lands and supposed riches of the valley of the Mississippi, and turned his attention to this region upon the formation of the company in 1717.<sup>4</sup> But he realized that

<sup>1</sup> J. T. Scharf, *op. cit.*, II, 1249.

<sup>2</sup> Cf. *infra*.

<sup>3</sup> *Annual Statement of Trade and Commerce of St. Louis*, 1910 (Report of St. Louis Merchant's Exchange), p. 239.

<sup>4</sup> Villiers du Terrage, *Les Dernières années de la Louisiane française*, p. 11.

an essential condition of success lay in the expectation that the stock would yield a tangible return. The pledge of the lands of Louisiana, moreover, as a guaranty for stock, availed very little, since the lands were scarcely worth anything. Again, owing to the newness of the country, and to the smallness of the population, very little was to be hoped from agriculture or commerce.<sup>1</sup> Nor were there any wealthy communities to plunder; there was no possibility of repeating the exploits of Cortez in Mexico, or of Pizarro in Peru. The most solid hope of success lay in the immediate discovery of new sources of precious metals.

It is a noteworthy fact that the physical aspects of upper Louisiana contributed very materially to the feeling of confidence which men felt in the region. The appearances were "in general such as to flatter the most sanguine expectations of mineral wealth, and the further the country became known the more interesting was found to be its mineralogical character. To men whose preconceived idea of the country was already high, such appearances must have had the most inspiring effect."<sup>2</sup> Discoveries of lead, copper, and iron were reported; even gold and silver were said to have been found. In this connection, the regions about the Red River, the Arkansas, the La Platte, and the Meramec were especially mentioned. Judging from what was found, men were ready to conclude that the country contained inexhaustible stores of wealth.<sup>3</sup> Thus the accounts which began to reach France about 1715 excited the greatest interest, and paved the way for the reception of still greater reports. When the mineralogist De Lochon, in 1719, sent home lead ore which he had obtained on the Meramec, a westward tributary of the Mississippi, extending into the Missouri territory, it seemed that the greatest expectations of mineral wealth were about to be realized.<sup>4</sup> It was asserted that the ore contained upward of 12 per cent of silver, which was a higher

<sup>1</sup> A. Franz, *Die Kolonisation des Mississippitales*, etc., p. 145.

<sup>2</sup> H. R. Schoolcraft, *A View of the Lead Mines of Missouri* (1819), p. 10.

<sup>3</sup> A. Franz, *op. cit.*, p. 146.

<sup>4</sup> In his letters to the Duchess Lesdiguières, Charlevoix said that De Lochon "took up a pretty large quantity of mineral which it took him four days to smelt, and produced, as they say, two drachms of silver, but some persons suspect that he put in the silver." Cf. ed. 1763, p. 292.

percentage than was contained in the product of the mines of Mexico. This alleged discovery contributed more than any other event to the rapid expansion of the Mississippi Bubble. "One can suspicion with reason," said Vallette-Laudun, writing in 1720, "that it was from this source that the stock and the bills of the bank have derived all their virtue."<sup>1</sup> In France, Law and his associates did not wait to verify De Lochon's assay, but forthwith spread the wildest stories about the riches of Louisiana. On one occasion, it was gravely announced that an immense emerald had been found so large that it was not known how to transport it; at another time, that twelve thousand Indians were engaged in collecting cocoons of the silk worm.<sup>2</sup> Meanwhile, the soil of Louisiana was reported to equal in fertility the banks of the Nile, and the mountains to vie in wealth with those of Peru. A map was circulated upon which the country was represented to be "full of mines."<sup>3</sup> Owing to the fact that but few persons in France had visited the country, the probability that these reports would be denied was small; moreover, those who were able to give information preferred to keep silent to avoid the lot of Cadillac, who had been imprisoned for speaking disparagingly of the new country.<sup>4</sup>

The outcome of an enterprise based on such gross exaggerations was "one of the most memorable disappointments recorded in the annals of commercial speculation."<sup>5</sup> Thousands of persons were ruined. Law at one time asserted that every person of means had a fortune invested in the speculator's portfolios.<sup>6</sup>

While the minerals of Missouri territory contained very little silver, they were rich in lead, and the miners very soon turned their attention to the extraction of that element. Success in this last-named industry was due to the co-operation of a number of factors. In the first place, the local demand of the fur-traders for shot gave

<sup>1</sup> Journal, quoted in Franz, p. 146; cf. similar statements on map of 1763 reprinted in Winsor, p. 105; and in Bradbury's account in Thwaites, *Early Western Travels*, V, p. 248.

<sup>2</sup> Villiers du Terrage, p. 15; Franz, p. 148.

<sup>3</sup> *Western Journal and Civilian*, III, 18.

<sup>4</sup> Villiers du Terrage, p. 15.

<sup>5</sup> Schoolcraft, p. 10.

<sup>6</sup> Adolph Thiers, *The Mississippi Bubble*, p. 185.

some encouragement to industry. Again, the abundance of ore, its existence on or near the surface, and in a form which was easily workable, and the location of the mines near the Mississippi River, by means of which the surplus was easily transported to New Orleans, greatly facilitated exploitation of the resources. In part, success was due to the situation of the mine country of Missouri at no great distance from the French colonies which during the twenty years preceding had been founded in Illinois. Among the most important of these were Kaskaskia and Cahokia. The farmers of these and other villages produced large quantities of food; their mills were the best in Louisiana.<sup>1</sup> The miners were, therefore, assured a generous supply of food. The merchants of Kaskaskia probably took lead in exchange for provisions; at any rate the metal was at one time one of the important exports of that village and contributed very materially to its prosperity.

In 1719, while Law's projects were still enjoying great prosperity, Philip Francis Renault, son of a well-known iron-founder of Consobre, in France, was appointed director general of the mining properties of the company in Illinois.<sup>2</sup> He left France the same year with about two hundred miners and artisans. Five hundred slaves were brought from San Domingo. The beginning of mining was therefore one of the incidents responsible for the introduction of Negro slavery into upper Louisiana.<sup>3</sup> Renault established himself at Fort Chartres, on the east side of the Mississippi, from whence he sent out exploring parties into Illinois and Missouri. The first mining was probably done at Mine La Motte, in Missouri, where the output, considering the early stages of the industry, was considerable. In 1741 the product was said to have amounted to 2,500 pigs, and in the following year to 2,228.<sup>4</sup> Renault continued his operations until 1742, when he returned to France, taking with him the greater part of his miners. From this date to the period of Spanish occupation the deposits were worked principally for the supply of the fur-traders.

<sup>1</sup> Captain Philip Pittman, *Present State of the European Settlements*, etc. (ed. 1906), pp. 85, 91, 92.

<sup>2</sup> Schoolcraft, p. 15.

<sup>3</sup> N. D. Harris, *History of Negro Servitude in Illinois*, p. 2.

<sup>4</sup> *Geological Survey of Missouri* (1873, 1874), p. 676.

The discovery of the deposits in Washington County, known as Mine à Burton, about the year 1763, led to renewed activity in the mine country. Work was apparently started at once, and the prospects were such as to draw the majority of the miners to this vicinity.<sup>1</sup> In the meantime, several events transpired in the region east of the Mississippi River which greatly augmented the population of Missouri. The war in America between England and France came to an end in 1763. The treaty of peace provided among other things for the cession of the territory east of the Mississippi River to Great Britain. This provision, however, was a severe blow to the loyal French, many of whom moved to Ste. Genevieve, or to St. Louis, or even to the mine country.<sup>2</sup> Again, the great flood of the Mississippi in 1785, which destroyed a vast amount of property in the bottom lands of Illinois, drove many settlers to Missouri. Finally, it was also probable that the Ordinance of 1787, which prohibited slavery in the Northwest Territory sent still more emigrants to the west side of the river.<sup>3</sup> To many of the newcomers the lead deposits offered an opportunity for enterprise; the emigrants were not, to be sure, professional miners; as a rule they were farmers; but during a portion of the year they were accustomed to work the mineral, the presence of which was justly regarded as a valuable source of wealth.

Reviewing the industrial history of Missouri to the year 1800, it appears that the lead resources were one of the principal forces promoting growth and prosperity. The Mississippi scheme resulted in planting in this region a population of between five hundred and a thousand. The early exploration of the country by Renault and his men paved the way for settlement after the cession of the region east of the Mississippi to Great Britain. As soon as capital and enterprise began to appear, the lead deposits were among the first resources to receive attention. A number of villages grew up in the mine country due to the presence of the mineral. Among these were Mine La Motte, in the present Madison County,

<sup>1</sup> *Missouri Geological Survey* (1894), VI, 270.

<sup>2</sup> Firmin A. Rozier, *Address at the One-Hundred-and-Fiftieth Celebration of the Founding of Ste. Genevieve*, p. 5.

<sup>3</sup> L. C. Beck, *Gazetteer of Illinois and Missouri*, p. 252.

and Mine Renault, in Washington County. Mine à Burton—later Potosi—dated from about 1763.<sup>1</sup> The old town of Ste. Genevieve, no doubt, owed its existence to the lead trade. During the first years of mining, the product was conveyed to Fort Chartres; this was inconvenient, since that village was on the east side of the Mississippi River, and at some distance north of the direct line of communication between Kaskaskia and the settlements in Missouri. A place of deposit was needed west of the river where metal not destined for local manufacture into shot could be stored until it was to be shipped to New Orleans. This was probably the principal condition which determined the site of the old village of Ste. Genevieve. In part, the town was called into existence to serve as a small *entrepôt* between the settlements on the east and west sides of the river. In this connection, Firmin A. Rozier, the historian of Ste. Genevieve, said: "Renault's only success was in the smelting of lead, which was conveyed to Fort Chartres on pack horses until 1735; after this, the depot of minerals was made at 'le vieux village de Sainte Genevieve.'"<sup>2</sup> Tradition places the founding of the town about the year above named.<sup>3</sup> The old village was abandoned in 1785 because of the great flood of the Mississippi, and settlement was made on higher land several miles north. The place thus settled was for many years one of the principal trading points in the upper Mississippi valley. Its merchants imported goods directly from Philadelphia and Baltimore. In the early years of St. Louis, while the men of enterprise were still principally engaged in the fur trade, purchases were often made at Ste. Genevieve.<sup>4</sup> A considerable portion of the business formerly carried on at Kaskaskia was transferred to this place. But the principal exports continued to be lead and furs, or other goods connected with this trade. Indeed, Ste. Genevieve continued to be one of the important places of

<sup>1</sup> *Geological Survey* (1894), VI, 270; R. A. Campbell, *Gazetteer of Missouri*, pp. 339, 634; Thwaites, XV, 175, note.

<sup>2</sup> Rozier, *op. cit.*

<sup>3</sup> A relic of a chimney found in 1881 bears the date 1732; cf. Thwaites, IV, 266, note. The Nuremburg map of 1756, however, which shows the western settlements in much detail, does not indicate the town. Cf. *Gist's Journal* (ed. Darlington), pp. 136, 137.

<sup>4</sup> Rozier, *op. cit.*



deposit for the metal produced in southeast Missouri until about 1857, when the building of the Iron Mountain Railroad transferred the bulk of the trade to St. Louis. The population of the town in 1799 was about 945, and in 1804 about 1,300.<sup>1</sup>

The total amount of lead ore mined in Missouri during the years 1720 to 1790 has been estimated at 36,000 tons, valued at \$1,440,000; from this were produced about 18,000 tons of metal valued at \$1,800,000.<sup>2</sup> The output of metallic lead for the year 1799 was estimated at 1,340 hundredweight.<sup>3</sup> The value of the shot manufactured during the years above named and supplied to the traders must have been large. When we consider the smallness of the population, and the primitive methods employed for the extraction of the metal, the quantity of product named above seems to indicate that an important part of the industrial activity of the people was connected with the lead business.

The period comprising the next thirty years (1800-1830) was one of rather slow but substantial growth. The influence of the mineral wealth, however, was notable, and the towns which engaged in the lead business were among the most prosperous in the state. There was much activity in exploring for new deposits; new settlements were made, and the manufacture of lead on an important scale was begun.

One of the notable events of the period was the arrival of Moses Austin from Virginia. His enterprise marked an era in the lead industry. He sunk the first regular shaft into a mine; he introduced the reverberatory furnace, and subsequently erected a shot-tower and began the manufacture of bar and sheet lead.<sup>4</sup> It was due largely to his effort that Herculaneum was founded. In 1797, according to Schoolcraft, Austin made a trip to Mine à Burton and obtained a grant of one league square from the Spanish government upon the condition of making some of the improvements above named. Schoolcraft asserts that the arsenals of that power at New

<sup>1</sup> Rozier, p. 6.

<sup>2</sup> *Missouri Geological Survey* (1894), VII, 540.

<sup>3</sup> Charles Gayarre, *Louisiana under Spanish Domination*, p. 406.

<sup>4</sup> Schoolcraft, p. 19.

Orleans and Havana drew a considerable part of their supplies from Missouri.<sup>1</sup>

As above indicated, Herculaneum, on the west bank of the Mississippi River, about thirty miles below St. Louis, was founded during this period. It owed its origin and subsequent prosperity to the lead trade, and its decline after 1825 was due to the removal of this business to other shipping points nearer the mineral region.<sup>2</sup> "After the transfer of the country [west of the Mississippi River] to the United States," said Frederic L. Billon, "and the extensive development of lead mineral throughout all this region back from the river, two enterprising Americans, Colonel Samuel Hammond, Sr., of St. Louis, and Moses Austin of Ste. Genevieve, perceiving the advantages of this point for an extensive lead business from its nearer proximity to the mines than Ste. Genevieve, then the only point of shipment on the river, purchased from one Judathan Kendall, on January 9, 1809, a tract of four hundred arpents at the mouth of Joachim Creek and immediately laid off their plat of the town."<sup>3</sup> Other physical features materially aided the industrial development of the place. The location, for example, provided a good landing for boats, while Joachim Creek afforded an excellent harbor.<sup>4</sup> Moreover, the perpendicular cliffs, rising some two hundred feet from the water's edge, formed a natural elevation from which the shot-makers could drop the molten metal, thus sparing the capital involved in the erection of towers. The bluffs at other places along the Mississippi in Missouri served a similar purpose.<sup>5</sup> In 1809, an establishment was erected in the vicinity of the town for the manufacture of shot. Subsequently, others were erected in the neighborhood.<sup>6</sup> The energy with which capital turned to this form of production at this early date is remarkable when it is noted with what great reluctance men of means in Missouri gave attention to

<sup>1</sup> *Ibid.*

<sup>3</sup> *Ibid.*

<sup>2</sup> J. T. Scharf, II, 1867.

<sup>4</sup> L. C. Beck, p. 284.

<sup>5</sup> An advertisement in the *Illinois Intelligencer* (Vandalia), April 24, 1830, offers this as an inducement for the investment of capital in the lead business. The cost of an establishment was estimated at \$1,500. Cf., also, F. L. Billon, *Annals of St. Louis*, II, 115; T. Flint, *History and Geography of the Mississippi Valley* (1832), I, 308.

<sup>6</sup> Schoolcraft, p. 46.

manufactures.<sup>1</sup> The imperfect returns of the Census of 1821 give the value of dutiable articles produced in Missouri as \$160,419.<sup>2</sup> While the true value undoubtedly exceeded this amount, the percentage of the manufactures of lead in the total was large. The amount of shot exported from Herculaneum alone during the eighteen months ending with June, 1818, was 668,350 pounds, valued at \$46,784, and the exports of pig and bar lead during the same period were valued at \$126,294.<sup>3</sup>

Until 1825, Herculaneum shared about equally with Ste. Genevieve the lead trade of southeast Missouri. About that year, however, the first-named town began to lose its importance, and Selma and Rush Tower, which were nearer the mineral region, began to come to the front. In the meantime, several of the lead towns founded during the former period continued to flourish. The element was still one of the principal sources of the prosperity of Ste. Genevieve. About 1812, H. M. Brackenridge asserted that although "the principal employment of the inhabitants is agriculture, the greater part are, also, more or less engaged in the lead business. This is a career of industry which is open to all, and the young in setting out to do something for themselves usually make their first essay in this business."<sup>4</sup> The total estimated output from Missouri for the years 1800 to 1829 was 73,000 tons of mineral valued at \$2,920,000; from this was produced 44,400 tons of metal valued at \$4,188,000.<sup>5</sup> The amount of shot manufactured during the period probably approximated an annual average of \$50,000. About 1819, Schoolcraft estimated that upward of 1,130 persons, including miners, blacksmiths, etc., were engaged in the business for at least a portion of the year.<sup>6</sup>

The principal event of the years 1830-60 was the development of the mineral regions in northwestern Illinois and southern Wisconsin.

<sup>1</sup> Cf. "Report of the Select Committee on Manufactures and Corporations." Appendix, *Senate Journal, Fifteenth General Assembly of Missouri*, p. 193; *Report St. Louis Chamber of Commerce* (1852), pp. 34, 35.

<sup>2</sup> *Niles' Register*, XXVI, 51.

<sup>3</sup> Schoolcraft, p. 47.

<sup>4</sup> *Views of Louisiana* (1814), pp. 126, 127.

<sup>5</sup> *Missouri Geological Survey* (1894), VII, 540.

<sup>6</sup> Schoolcraft, p. 128.

From the point of view of the industrial development of Missouri, this feature is important because of the great stimulus the northern trade gave to the commercial growth of St. Louis. While mining in Missouri continued to prosper, the annual output was at times scarcely more than one-fourth that of the upper Mississippi region.<sup>1</sup> The product from southeast Missouri continued to be exported from Ste. Genevieve, Selma, Plattin, and Rush Tower, although a portion of this lead was shipped on commission for merchants of St. Louis. The total amount exported from these places during the years 1824-54 was about 106,193,000 pounds.<sup>2</sup>

That the metal trade of the upper Mississippi came to St. Louis rather than to other places on the river was due to the unrivaled position of that city, and to conditions which resulted from this situation. Ste. Genevieve seemed to have a prior claim upon the trade, since it was a thriving commercial town, and was already a place of deposit for much of the product of Missouri. Moreover, Alton sought to attract the business. In this effort she was assisted by the liberal policy of the legislature. Her merchants, moreover, were granted liberal loans by the state bank.<sup>3</sup> But St. Louis possessed the greater advantages. Centrally located on the great interior system of waterways, with the Missouri, the Illinois, and the Ohio focusing traffic upon it, a bulk-breaking point as between the upper and the lower Mississippi, the nearest place of supply for the frontier army posts, convenient, also, for the traders operating in the Northwest, and for expeditions destined for Santa Fe, no other place on the river could compare with it. Moreover, many of the steamboats were owned by St. Louis merchants and were employed for the express purpose of bringing trade to the city. Owing to the advantages just named, an active, wealthy body of

<sup>1</sup> *Proceedings of the St. Louis Chamber of Commerce in Relation to the Improvement of the Navigation of the Mississippi* (1842), p. 15.

<sup>2</sup> A. Litton, "Preliminary Report," in *First and Second Annual Report of the Geological Survey of Missouri*, p. 65.

<sup>3</sup> *Alton Telegraph*, May 9, 1838; April 27, 1836. The *Telegraph* of December 28, 1836, said: "She [Alton] has the entire good will of the state government whose legislation toward her has recently been of the most liberal character. Various motives prompt this—perhaps the question of slavery is not without its influence in the states thus favoring a commercial emporium of its own in preference to St. Louis."

merchants had appeared here; they possessed the capital to handle the lead trade, and their co-operation was eagerly sought by the lead-makers up-river.

For years before St. Louis was founded, the Indians, instructed by the French in the use of fire-arms, began to look upon lead as a valuable substance.<sup>1</sup> In passing, this circumstance affords another illustration of the intimate connection between the growth of the fur trade and the development of the lead resources.<sup>2</sup> Subsequently the pursuit of mining and smelting was destined to transform the industrial interests of certain tribes inhabiting the mineral region. Possibly as early as 1690,<sup>3</sup> the Red men began to give attention to the extraction of lead, but for many years the amount produced was scarcely more than sufficient for the supply of the trappers. During the first decade of the nineteenth century, however, large quantities were manufactured. About 1809, Bradbury asserted that "as the game on the lands which they [the Indians] claim is nearly destroyed they have, therefore, been compelled to commence the business of mining."<sup>4</sup> Writing the following year, Nicholas Boilvin, United States agent to the Winnebagoes, stated that the Sacs and Foxes had mostly abandoned the chase, and were devoting their attention to the production of lead. About 400,000 pounds were produced in that year.<sup>5</sup> Before this date, however, the Indians had taken small quantities of metal in their canoes to Portage des Sioux and to St. Louis for the purpose of barter, and Julien Dubuque, who, in 1788, established himself among the Indians in the vicinity of the present city which bears his name, sent lead and furs to St. Louis, making two trips a year in a pirogue.<sup>6</sup>

Prior to 1815, however, commerce between the upper Mississippi and the towns below met with much resistance because of the opposition of the English traders. The Canadians incited the Indians against the Americans partly to monopolize their trade, and partly to secure their friendship in case of a war between the United States and Great Britain. The presence of the mineral

<sup>1</sup> *Wisconsin Historical Collection*, XIII, 271.

<sup>2</sup> Cf. *supra*.

<sup>3</sup> *Wisconsin Historical Collection*, XIII, 271.

<sup>4</sup> Thwaites, *op. cit.*, V, 252, note.

<sup>5</sup> *Wisconsin Historical Collection*, XI, 251, 252.

<sup>6</sup> *Expedition of Z. M. Pike* (ed. 1895), I, 226.

resources, however, suggested a way to eliminate this influence. Boilvin maintained that by the adoption of a simple measure the federal government could turn the course of the Indian trade. In short, he proposed that the Red men should be encouraged to manufacture lead. This object, he asserted, would be easy to accomplish, "especially as the profits of this manufacture are much greater and less precarious than the laborious pursuit of peltries—as soon as the Indians in general turn their attention to lead, the Canadian traders will wholly abandon the country, as they have no use for that article, at least in the way of commerce."<sup>1</sup>

The War of 1812, which finally eliminated the English influence, marked the beginning of a new era in the commercial history of St. Louis. "After the peace of 1815, and all was settled down in quiet in the Northwest, the channel of the Indian trade was completely changed from Mackinaw, where it has so long centered, to St. Louis, as it was found far more accessible, and by this time there were several heavy establishments of merchandise selected with special reference to this trade."<sup>2</sup> To furs and peltries was added lead in ever-increasing quantities. From this date for the next forty years, the trade in this metal was one of the largest elements in the commercial upbuilding of the city. The mere value of the lead imported, however, was only one element in the subsequent commercial expansion. Arriving at St. Louis, the metal again formed the basis for much trade with the cities on the Ohio River, and with New Orleans. As a raw material it entered into local manufactures. Moreover, in order to satisfy the demands of the up-river trade, the merchants of St. Louis found it necessary to increase their stock. Boat lines were established to communicate with the mineral region, and the eagerness to retain the northern commerce against the competing influences attracting it directly eastward forced the St. Louis interests to urge repeatedly the improvement of the upper Mississippi River.<sup>3</sup> The combined

<sup>1</sup> *Wisconsin Historical Collection*, XI, 252.

<sup>2</sup> *Wisconsin Historical Collection*, II, 229.

<sup>3</sup> Cf. *Report St. Louis Chamber of Commerce on the Improvement of the Navigation of the Mississippi River* (1842); *Commerce and Navigation of the Valley of the Mississippi* (report prepared for the St. Louis members of the Chicago River and Harbor Convention, 1847); *St. Louis Republican*, May 31, 1847; June 16, 1847; July 9, 1847.

effect, therefore, of these elements was to give a great stimulus to growth and improvement.

At the close of the War of 1812, the merchants of St. Louis quickly realized the value of the lead business and made an effort to secure it. As early as 1816, Colonel John Shaw, who at one time operated a boat between this city and the mineral region, had orders to bring down lead in payment for goods.<sup>1</sup> Shaw stated that on one trip, about 1815, he carried away seventy tons of metal and left much at the mines. Subsequently, the traders transported their own lead, making purchases at St. Louis.

The development by American enterprise of the mineral region in the vicinity of Galena, Ill., opened a new source of trade for the merchants of St. Louis; forthwith the quantity of lead entering into the commerce of the city greatly increased. A new element in this trade was the demand for provisions. Partly because of the rapidity of settlement, and partly because the emigration consisted chiefly of persons interested in the lead business, the surrounding country was for a number of years unable to provide the food supply, a portion of which was brought up from St. Louis.

Some idea of the extent of this new market, and of the new working force which had been suddenly introduced into this region, may be gleaned from a study of the growth of population. From less than 100 in 1823, the number increased to about 400 in 1826, and to about 1,600 in 1827.<sup>2</sup> On March 15 of that year, the *Missouri Republican* said: "The emigration this spring to the United States' lead mines on the upper Mississippi is immense. One steamboat, intended as a regular trader, has already left here for the above place, and three others are advertised to depart soon. We have heard that the accession of diggers and others will amount to several thousand." For the year 1828 the population at Galena and in the vicinity was estimated at from 7,000 to 10,000.<sup>3</sup> Galena shortly became the shipping point for the bulk of the lead pro-

<sup>1</sup> *Wisconsin Historical Collection*, II, 229.

<sup>2</sup> *Illinois Intelligencer*, September 30, 1826; March 15, 1828; *Niles' Register*, XLI, 340; *Hunt's Merchant's Magazine*, XVI, 181; *Wisconsin Historical Collection*, II, 329; VIII, 251.

<sup>3</sup> Thomas Ford, *History of Illinois*, p. 68.

duced in the upper Mississippi region. About 1829, Caleb Atwater suggested the importance of the metal traffic when he said: "The trade in lead (centering at St. Louis) manufactured either in Missouri or in the mineral region of the upper Mississippi has been a great business."<sup>1</sup> In 1835, six or eight steamboats were regularly engaged in the trade, and in 1842 it was reported that the lead traffic "now gives employment to hundreds of keel and flat boats from Galena to St. Louis."<sup>2</sup> During ten months of the year just named, the arrivals of steamboats at Galena from St. Louis numbered 195, and of keel boats towed by steamers, 160.<sup>3</sup>

The absence of data covering the years before 1822 makes it impossible to estimate the value of lead in the total commerce of St. Louis; one may infer, however, from the former indications, that it was considerable. About 1829, Atwater estimated the total commerce of the city roughly at \$10,000,000.<sup>4</sup> In this year 13,300,000 pounds of lead were exported from Galena, valued in the St. Louis market at about \$500,000.<sup>5</sup> Since goods were sent up-river in payment, the total business between the two places directly connected with the metal was about one million dollars. The southern trade of St. Louis, based upon lead, once more taking into account exports of metal and imports of goods, was approximately a million dollars.<sup>6</sup> On this basis, the total value of the business of St. Louis directly connected with the lead trade amounted to about two million dollars, or one-fifth the total estimated value of the commerce in 1829.

A reference to the exports of lead from Galena during the years 1822-51 gives another indication of the great relative importance of the lead trade to St. Louis. During this period about 697,166,000 pounds were shipped from Galena.<sup>7</sup> At St. Louis prices this was

<sup>1</sup> "Remarks on a Tour to Prairie du Chien" (in writings of Atwater), p. 221.

<sup>2</sup> *Hunt's Merchant's Magazine*, VIII, 385; *Wisconsin Historical Collection*, XV, 280.

<sup>3</sup> *Review of the Commerce of St. Louis for 1849*, p. 10.

<sup>4</sup> Writings, *op. cit.*, p. 221.

<sup>5</sup> Cf. *Hunt's Merchant's Magazine*, XL, 244.

<sup>6</sup> Very little lead was consumed in the manufactures of St. Louis at this time.

<sup>7</sup> Figures compiled from various sources; cf. *Report St. Louis Chamber of Commerce*, 1852, pp. 21, 22; *Review of the Commerce of St. Louis for 1849*, p. 31; *Hunt's Merchant's Magazine*, XL, 344; Timothy Pitkin, *Statistical Review*, etc., p. 505.



valued at about \$30,000,000. Estimated according to the method indicated above for the year 1829, the total up-river commerce connected with lead amounted to about \$60,000,000, and the down-river trade centering at St. Louis at about \$50,000,000,<sup>1</sup> making a grand total of \$110,000,000 for the years above named, or an annual average of about \$3,600,000. This was about one-tenth the estimated value of the imports and exports of St. Louis in 1841,<sup>2</sup> and about one-twentieth in 1847.<sup>3</sup> The value of lead in the trade of other western and southern cities was insignificant compared with its importance to St. Louis. It formed less than one-fortieth of the commerce of New Orleans with the interior in 1841, and less than one-hundredth in 1851-52; and bore even a smaller relation to the total business of Cincinnati.<sup>4</sup>

The lead trade between St. Louis and the upper Mississippi reached its maximum about the year 1848. The principal cause involved in the decline was the difficulty of transportation on the upper river, and the opening of shorter outlets to the east.<sup>5</sup> The prospective loss of this business had been a matter of great concern to the merchants of St. Louis. As early as 1826, a person of this city urged the use of the money derived from the sale of the mineral lands for the improvement of the rivers.<sup>6</sup> In 1848 the plea was advanced that

St. Louis, despite her advantages, may yet fall behind other western cities—the improvement of the upper Mississippi rapids we look upon as a work of vital importance to our citizens. The difficulty, particularly at low stages of navigation, in crossing these barriers, and the consequent high rates of transportation, greatly retards our trade with the rich country bordering on this stream, and if some means is not adopted to obviate this difficulty before the completion of the Chicago & Galena Railroad, the direction of our trade will be

<sup>1</sup> Allowance is made for local manufacture of shot and white-lead.

<sup>2</sup> *Proceedings of the St. Louis Chamber of Commerce in Relation to the Improvement of the Mississippi River* (1842), p. 25.

<sup>3</sup> *Commerce and Navigation of the Valley of the Mississippi* (St. Louis report, 1847).

<sup>4</sup> *Western Journal*, IX, 48, 49; V, 51; *Hunt's Merchant's Magazine*, XLII, 60.

<sup>5</sup> This matter has been thoroughly discussed by Dr. Libby in *Wisconsin Historical Collection*, XIII.

<sup>6</sup> *Illinois Intelligencer*, September 30, 1826.

influenced in favor of the former place. The importance of the lead trade to St. Louis is too well known to require comment, but the loss of this trade is not all that we will be forced to sustain.

The diversion of a large part of the lead business after the completion of the railway above named was inevitable, and no river improvement could have maintained it in the old channel. St. Louis, however, was able to retain a portion of the trade. The former advantages of manufacturing the products of lead at a primary market had called into existence establishments for the production of white-lead, bar, and shot; the demand of these establishments continued to attract a portion of the northern lead. St. Louis, moreover, was the distributing point of a large area in which lead in its various forms was needed. The decline of the northern trade after 1850, however, was marked. From 575,900 pigs in 1850, the receipts fell to 306,300 in 1855, and to 162,500 in 1857.<sup>1</sup>

While this was a great loss, the old trade had conferred benefits which were permanent. It had increased the wealth of the merchants, stimulated manufactures, invited population, increased the carrying trade of the local boat-owners, and in a general way enlivened industry. The contribution of lead, therefore, to the commercial growth of the city was very great. Moreover, the decline in the lead market of St. Louis was only temporary. The development of the resources of southwest Missouri, and the revival of interest in mining in the southeastern part of the state, restored the city to its former position as a lead market. This is indicated by the fact that during the years 1862-82 the receipts amounted to 735,000,000 pounds,<sup>2</sup> valued at about \$22,000,000, and during the years 1883-1910, to about 3,825,000,000 pounds,<sup>3</sup> valued at \$120,000,000. While the lead business declined in relative importance, owing to the expansion of the commerce of the city in other directions, the metal has constituted an ever-increasing source of wealth.

<sup>1</sup> *Fifth Annual Report of the St. Louis Board of Trade*, p. 24.

<sup>2</sup> J. T. Schaft, *op. cit.*, II, 1,253; *Geological Survey of Missouri, Industrial Report on Lead and Zinc* (1877), p. 172.

<sup>3</sup> *Annual Statement of Trade and Commerce of St. Louis*, 1910, p. 230.

The mineral resources of southwest Missouri began to attract attention about 1850. Population and capital were drawn hither; a number of towns were founded; and lead became generally a vitalizing influence in the industrial growth of that section. Agriculturalists felt the new stimulus in the sudden appearance of a large local demand for provisions, which, in the days before the building of railroads, afforded almost the only market for the surplus of the farms.

The existence of lead in this region was known to the earliest settlers, but the extent of the deposits was not realized. The pioneer workers produced a small quantity of metal which they disposed of in the western towns.<sup>1</sup> Occasionally an enterprising storekeeper operated a smelter and sent the product to St. Louis to exchange for merchandise.<sup>2</sup> But the great difficulty in getting lead to market retarded development. Before railways were built in the southwest corner of the state, the product was sometimes hauled to Linn Creek on the Osage River, or to Boonville on the Missouri, whence it was brought to St. Louis; or it was hauled to Grand River and floated to Fort Smith, whence it was shipped to New Orleans. The first two routes named, however, enjoyed the preference, owing to the fact that shipment by Grand River involved a haul through the Indian country, and owing, also, to the great difficulty in getting lumber for flatboats. Grand River, moreover, was navigable for only a few months in the year.<sup>3</sup> From the first, therefore, St. Louis received the principal benefits of this trade, and as had formerly been the case with the development of the region about Galena, a new market was opened for the St. Louis merchants.

The notable event prior to the Civil War was the rise of Granby in Newton County. An excavation had been made about one mile from the place in 1850. Soon after, a great number of shallow diggings were made in the vicinity. In many instances these met with success.<sup>4</sup> The great interest aroused by subsequent discov-

<sup>1</sup> Conrad, *op. cit.*, VI, 554.

<sup>2</sup> M. G. McGregor, *Biographical Record of Jasper County*, p. 31.

<sup>3</sup> *Western Journal*, XIII, 121; McGregor, *op. cit.*, p. 27.

<sup>4</sup> *Report of the Geological Survey of Missouri* (1873, 1874), p. 488.

eries attracted a large population to the neighborhood. "In the fall of 1854 there was not a cabin on the site where Granby now (1858) stands—and only one shaft had been sunk into the soil of the rich mineral region which is now penetrated by thousands."<sup>1</sup> In 1858 a population estimated at six or seven thousand had been attracted to the neighborhood of the town.<sup>2</sup> Before the war upward of 35,000,000 pounds of metal had been produced from the Granby section. Some prospecting, meanwhile, had been done in other counties.

The lead business suffered severely during the war. After the restoration of peace, mining operations were gradually resumed. Southwest Missouri, however, still labored under the old handicaps concerning transportation. It was not until the years 1870-75, when the Atlantic & Pacific Railroad—now the St. Louis & San Francisco—was brought into this section, that an adequate outlet was obtained. This event in itself gave great encouragement to enterprise. Meanwhile, prospecting in the southern part of Jasper County revealed the marvelous wealth of her deposits. Before this time, this section had been a sparsely settled farming area. It now began to manifest all the life of a new mining community. Joplin sprang into existence and forthwith became a prosperous town; its rise was even more sudden than that of Granby. "In 1870, not a single house was on the place where two years afterward a flourishing town stood, which has grown to a city of 5,000 inhabitants."<sup>3</sup> About 1875, Webb City and Cartersville came into existence as a result of the exploitation of the minerals of the vicinity.

In the subsequent growth it is impossible to separate the influence of lead from that of zinc; the two metals occur together. In recent years, however, zinc has been produced in the larger quantities. Aside from the places already named, Oronogo owed its existence to lead, and various other towns in southwest Missouri are more or less interested in the lead business. Joplin became a city of 7,038 in 1880, of 9,943 in 1890, and of 26,023 in 1900. The

<sup>1</sup> *Geological Report of the Country along the Line of the Southwest Branch of the Pacific Railroad* (Swallows, 1858), p. 36.

<sup>2</sup> *History of Newton, Lawrence, etc., Counties*, p. 364.

<sup>3</sup> *Geological Survey of Missouri* (1873, 1874), p. 489.

population of Webb City in the last-named year was 9,201; of Cartersville, 4,445, and of Oronogo, 2,073.<sup>1</sup> During the decade 1890-1900 the mining counties increased in population at a more rapid rate than the state as a whole. For Jasper the rate was 66.4 per cent; for Newton, 22.1 per cent; and for St. François, 38.6 per cent. The rate for the state as a whole was 16 per cent.<sup>2</sup> The stimulating effect of lead resources has been felt in a similar way in other localities. In 1870, nine counties reported the production of lead; in 1880, fourteen counties. In 1900, twenty-one counties reported the production of lead and zinc.<sup>3</sup> Some idea of the wealth of the state derived from the lead resources in recent years may be gleaned from the fact that during the years 1860 to 1893 the amount of mineral taken from the earth amounted to about 804,600 tons, valued at \$36,938,000. From this was produced about 563,000 tons of metal valued at \$55,763,000.<sup>4</sup> During the years 1895-1910 upward of 1,762,000 tons of mineral were mined, valued at about \$88,266,000.<sup>5</sup>

An abundance of raw material has always given the manufacturers of lead in Missouri special advantages. The earliest form of this industry was the production of shot. In recent years the principal output has been white-lead. Up to about 1850, when the capitalists of the state began to give attention to general manufactures, the relative importance of the products of lead was maintained. According to the Census of 1840, about one-twelfth of the capital invested in manufactures was engaged in the lead business. In Illinois, which was also a large producer of lead, only one twenty-seventh of the capital was so employed.<sup>6</sup> This high relative importance held true for St. Louis also. Of the \$15,400,340 reported by the Census of 1850 as the product of manufactures, \$1,050,000

<sup>1</sup> *Twelfth Census U.S. Population*, I, Pt. i, pp. 460, 461.

<sup>2</sup> *Ibid.*, Pt. 1, pp. xlvii, xlviii.

<sup>3</sup> *Annual Statement of the Trade and Commerce of St. Louis*, 1900, p. 81; *Geological Survey of Missouri* (1894), VI, 293, 298.

<sup>4</sup> *Missouri Geological Survey* (1894), VII, 540.

<sup>5</sup> Figures compiled principally from the annual reports of the St. Louis Merchant's Exchange, 1895-1910; and the Mine Inspector's reports of Missouri.

<sup>6</sup> *Compendium of the Enumeration of Inhabitants and Statistics of the United States* (1840), pp. 294, 306, 361.

covered the products of lead, namely, shot valued at \$375,000, white-lead and oil at \$600,000, and pipe and sheet lead at \$75,000.<sup>1</sup> While the lead products have declined in relative importance since 1850, the output has always been large. Upward of one-third the receipts in St. Louis for the years 1883-1910 were consumed in the local establishments; and during the years 1899-1910, the average annual shipments of white lead amounted to 62,000,000 pounds.<sup>2</sup> The greater portion of the manufacture of the products of lead in Missouri is carried on in St. Louis. From the foregoing account, it is evident that the stimulating effect of lead resources in Missouri has not been confined to mining and commercial industries but has extended to manufactures as well.

Scarcely anything need be added to indicate the contribution which the lead resources have made to the industrial growth of Missouri. It was these resources which first attracted population and capital to the state, and during the one hundred and ninety years following they have continued to exert an influence in the same direction. Towns have been founded under this stimulus. Some of these at the present day owe a large part of their prosperity to the lead business. The demands of the mining population for food has brought prosperity to the farmers in a number of sections. This was particularly true before the building of railways permitted the agriculturalists to seek a more distant market. Moreover, the hope of finding rich beds of ore has led the prospector over a large part of the southern portion of the state. This, also, has aided development. Finally, the commerce in lead centering at St. Louis has added many millions of dollars of trade to that city, and has incidentally promoted the expansion of trade in other directions. Taken in all its bearings, therefore, the presence of mineral lead has been one of the greatest forces in promoting the exploration and settlement of Missouri, and in assisting the growth of both its commerce and its manufactures.

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<sup>1</sup> *Western Journal*, V, 263.

<sup>2</sup> *Annual Statement of Trade and Commerce of St. Louis*, 1910, p. 239.